UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,549	10/28/2003	Rycharde Jeffery Hawkes	30018432-2	5467

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EXAMINER
STEVENS, THOMAS H

ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>28 October 2003</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-14</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-14</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>28 October 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>10/28/2003</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

1.   Claims 1-14 were examined.

Information Disclosure Statement

2.   The listing of references in the specification (i.e., page 16, lines 5-12) is not a

proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents,

publications, or other information submitted for consideration by the Office, and MPEP

§ 609.04(a) states, "the list may not be incorporated into the specification but must be

submitted in a separate paper." Therefore, unless the references have been cited by

the examiner on form PTO-892, they have not been considered.

Specification

3.   The disclosure is objected to because of the following informalities: "Statement of

the Invention" should be changed to "Summary of the Invention"'.

Appropriate correction is required.

Claim Interpretation

4.   Office personnel are to give claims their **"broadest reasonable interpretation"**

in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d

1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited

in the claim are not read into the claim. In re Prater, 415 F.2d 1393, 1404-05, 162

USPQ 541, 550-551(CCPA 1969). See *also In re Zletz, 893 F.2d 319, 321-22, 13

USPQ2d 1320, 1322(Fed. Cir. 1989) ("During patent examination the pending claims

must be interpreted as broadly as their terms reasonably allow") .... The reason is

simply that during patent prosecution when claims can be amended, ambiguities should

be recognized, scope and breadth of language explored, and clarification imposed ....

An essential purpose of patent examination is to fashion claims that are precise, clear,

correct, and unambiguous. Only in this way can uncertainties of claim scope be

removed, as much as possible, during the administrative process. The Office interprets

the various "versions" as the following from the disclosure paragraph [0010]: *a first*

version for use in one of said different complexities of simulation, and a second version

for use in the other of said different complexities of simulation.

Claim Objections

5.   Claim 9 recites the limitation "the activities" in column 1 and "the model" in

column 19 which could pose an antecedent problem. Suggestion: "activities", "a

model".

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7.   Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Smith et al.,

(US Patent 5,678,013; hereafter Smith). Smith discloses a method and apparatus for

constructing subroutines to define the behavior of simulation objects (abstract).

Claim 9. A method of simulating the activities of a plurality of creatures (Smith: column

31, line 14), the method comprising utilizing at least two modes of simulation: a first

mode arranged to simulate the activities of all of said creatures (Smith: column 31, line

14); and a second mode arranged to simulate the activity of at least one of said

creatures (Smith: column 31, line 14) at a more detailed level than said first mode;

wherein the model of a creature (Smith: column 31, line 14) simulated in both modes of

simulation comprises at least two portions: a first portion (Smith: column 6, lines 42-43)

which contains functions arranged for use in both of said modes of simulation; and a

second portion (Smith: column 6, lines 42-43) comprising two alternative versions, a

first version for use in said first mode of simulation, and a second version for use in the

second mode.

Claim Rejections - 35 USC § 103

8.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating
        obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

9.   Claims 1-8,10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Atsumi, titled, "Artificial Neural Development for Pulsed Neural Network Design--A

Simulation Experiment on Animat's Cognitive Map Genesis" (hereafter Atsumi) in view

of Smith.

Atsumi teaches an artificial neural network (abstract) with different simulation

complexities (pg.188, right column, 2nd paragraph, lines 10-13) but fails to teach first

and second portions.

Smith teaches graphical rewrite rules (title) with first and second portions (column

6, lines 42-43). Both pieces of art are analogous since they both teach simulation of

creatures.

Therefore it would have been obvious to one having ordinary skill in the art at the

time of invention was made to utilize the subroutines of Smith in the neural network

design of Atsumi because Smith teaches a method to modify object properties and

behavior rules (Smith: column 1, lines 42-44).

Claim 1. A method of simulating a creature (Smith: column 31, line 14) for use in two

different complexities of simulation (Atsumi: pg.188, right column, 2nd paragraph, lines

10-13 with claim interpretation), the method comprising utilizing a model of the creature

(Smith: column 31, line 14) that comprises at least two portions, a first portion (Smith:

column 6, lines 42-43) which contains functions for use in both of said different

complexities of simulation (Atsumi: pg.188, right column, 2nd paragraph, lines 10-13

with claim interpretation); and a second portion (Smith: column 6, lines 42-43)

comprising two alternative versions, a first version for use in one of said different

complexities of simulation (Atsumi: pg.188, right column, 2nd paragraph, lines 10-13

with claim interpretation), and a second version for use in the other of said different

complexities of simulation (Atsumi: pg.188, right column, 2nd paragraph, lines 10-13

with claim interpretation).

Claim 2. A method as claimed in claim 1, wherein said first portion (Smith: column 6,

lines 42-43) comprises a behavior (Atsumi: pg.197, right column, lines 18-20) selection

mechanism arranged to select the behavior (Atsumi: pg.197, right column, lines 18-20)

of said creature (Smith: column 31, line 14).

Claim 3. A method as claimed in claim 2, wherein said behavior (Atsumi: pg.197, right

column, lines 18-20) selection mechanism is arranged to select the behavior (Atsumi:

pg.197, right column, lines 18-20) based upon at least one of: the current behavioral

(Atsumi: pg.197, right column, lines 18-20) state; one or more internal state variables

(Atsumi: pg.189, left column, 2nd paragraph, lines 13-14) of the creature (Smith: column

31, line 14); the environment surrounding the creature (Smith: column 31, line 14); one

or more sensory inputs to said creature (Smith: column 31, line 14).

Claim 4. A method as claimed in claim 2, wherein said behavior (Atsumi: pg.197, right

column, lines 18-20) selection mechanism consists of a set of mutually exclusive

behavioral (Atsumi: pg.197, right column, lines 18-20) states.

Claim 5. A method as claimed in claim 1, wherein the second version is for use in the

less complex of the simulations, and is arranged to approximate the functionality of the

first version (Atsumi: pg.188, right column, 2nd paragraph, lines 10-13 with claim

interpretation).

Claim 6. A method as claimed in claim 1, wherein the first version (Atsumi: pg.188, right

column, 2nd paragraph, lines 10-13 with claim interpretation) utilizes a neural network

(Atsumi: pg.189, left column, 2nd paragraph, line 2).

Claim 7. A method as claimed in claim 2, wherein said second portion (Smith: column

6, lines 42-43) is arranged to execute the selected behavior (Atsumi: pg.197, right

column, lines 18-20).

Claim 8. A method as claimed in claim 1, wherein the first version utilizes a three

dimensional physical simulation (Atsumi: pg. 189, figure 1) of the animat (Atsumi:

abstract, line 14), and the second version (Atsumi: pg.188, right column, 2nd paragraph,

lines 10-13 with claim interpretation) utilizes a parameterized model of the animat

(Atsumi: abstract, line 14) to approximate movement.

Claim 10. A method of simulating a process at two different levels of complexity

(Atsumi: pg. 194, table 1, various nerve areas representing levels of complexity), the

method comprising utilizing a model that comprises at least two portions, a first portion

(Smith: column 6, lines 42-43) which contains functions for use in both of said different

complexities of simulation (Atsumi: pg.188, right column, 2nd paragraph, lines 10-13

with claim interpretation); and a second portion (Smith: column 6, lines 42-

43)comprising two alternative versions, a first version for use in one of said different

complexities of simulation (Atsumi: pg.188, right column, 2nd paragraph, lines 10-13

with claim interpretation), and a second version for use in the other of said different

complexities of simulation (Atsumi: pg.188, right column, 2nd paragraph, lines 10-13

with claim interpretation).

Claim 11. A method as claimed in claim 10, further comprising evaluating one or more

conditions to determine a result of a rule for selecting which of the two alternative

versions of the second portion (Smith: column 6, lines 42-43) to use in simulating the

process.

Claim 12. A method as claimed in claim 10, wherein the second version is for use in the

less complex of the simulations, and is arranged to approximate the functionality of the

first version (Atsumi: pg.188, right column, 2nd paragraph, lines 10-13 with claim

interpretation).

Claim 13. A method as claimed in claim 10, wherein the first version utilizes a neural

network (Atsumi: pg.189, left column, 2nd paragraph, line 2).

Claim 14. A simulator device arranged to simulate a creature (Smith: column 31, line

14) in two different complexities of simulation (Atsumi: pg.188, right column, 2nd

paragraph, lines 10-13 with claim interpretation); the device being arranged to utilise a

model of the creature (Smith: column 31, line 14) that comprises at least two portions; a

first portion (Smith: column 6, lines 42-43) which contains functions used in both of said

different complexities of simulation (Atsumi: pg.188, right column, 2nd paragraph, lines

10-13 with claim interpretation); and a second portion (Smith: column 6, lines 42-43)

comprising two alternative versions, a first version used in one of said different

complexities of simulation (Atsumi: pg.188, right column, 2nd paragraph, lines 10-13

with claim interpretation), and second version used in the other of said different

complexities of simulation (Atsumi: pg.188, right column, 2nd paragraph, lines 10-13

with claim interpretation).

Citation to Relevant Prior Art
The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure:

- Guillot et al., "Computer Simulations of Adaptive Behavior in Animals" 1994, IEEE, Pg. 122-131:
  teaches various architectures of animats.
- DeMarse et al., " The Neurally Controlled Animat: Biological Brains Action with Simulated Bodies"
  Nov. 2001 Computer Science and Engineering Vol.11 Abstract, pg.1-3: teaches a hybrid real-time
  processing engine for living and electronic simulated components.

- EP 871137 A1 Eurpean patent teaches a method to simulate devices for forstering a virtual creature.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715, Monday-Friday (8:00 am- 4:30 pm EST).

If attempts to reach the examiner by telephone are unsuccessful, please contact examiner's supervisor Mr. Paul Rodriguez 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov.. Answers to questions regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) (toll-free (866-217-9197)).

October 3, 2006

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